

Appendix E Southwest Corridor:

Mobility Problems and Proposed Solutions



BACKGROUND

EXISTING CONDITIONS

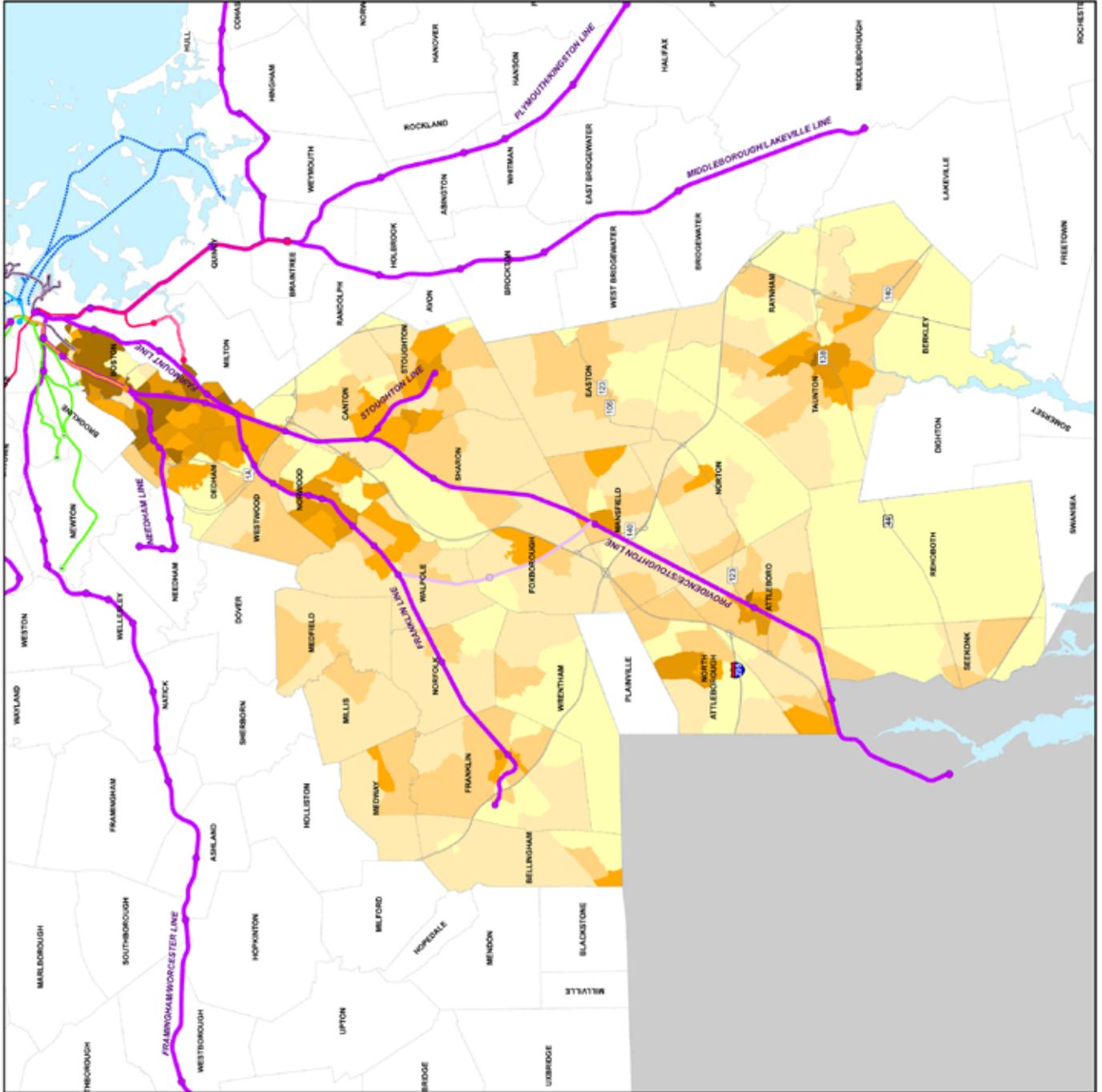
The Southwest Corridor begins with the Boston neighborhoods of Roxbury, Jamaica Plain, Roslindale, West Roxbury, and Hyde Park. From Boston the sector extends to Rhode Island and includes two cities and 23 towns.

The MBTA operates commuter rail, rapid transit, bus rapid transit, express bus routes, and 40 local bus routes in the corridor. Two commuter rail lines operate entirely within this corridor: the Franklin, Providence/Stoughton Lines. The Providence/Stoughton Line traverses the entire corridor and serves riders from Rhode Island. Parts of the corridor are also served by the Needham and Fairmount Lines.

Two MBTA rapid transit lines reach into the Southwest Corridor. The Silver Line bus rapid transit service goes from Boston Proper to Dudley Square, and the Orange Line has six stations in the corridor, including the major bus hubs of Ruggles and Forest Hills Stations. A number of local bus routes are centered on Dudley Square and Ruggles Station and serve the Southwest Corridor as well as adjacent corridors. A number of bus routes radiate from Forest Hills Station as well, serving Boston neighborhoods in this corridor as well as in Dedham, Westwood, Norwood, and Walpole.

In addition to the MBTA, the Greater Attleboro Taunton Regional Transit Authority (GATRA) provides bus services connecting with the Attleboro, South Attleborough, and Mansfield Stations on the Providence/Stoughton commuter rail line, and with Franklin Station on the Franklin Line. GATRA is responsible for several separate bus route networks. Seven GATRA routes serve Attleboro, and some of these extend into other municipalities. All but one of these routes serve downtown Attleboro.

MAP E-1 Southwest Corridor of the MBTA Service Area Population Density, 2000



**U. S. Census 2000
Population/Square Mile by TAZ**

- 0 - 500
- 501 - 1,000
- 1,001 - 2,000
- 2,001 - 4,000
- 4,001 - 8,000
- 8,001 - 176,000

Rapid Transit

- Blue Line
- Green Line
- Orange Line
- Red Line
- Mattapan High Speed Line
- Silver Line

Commuter Boat

- Commuter boat route

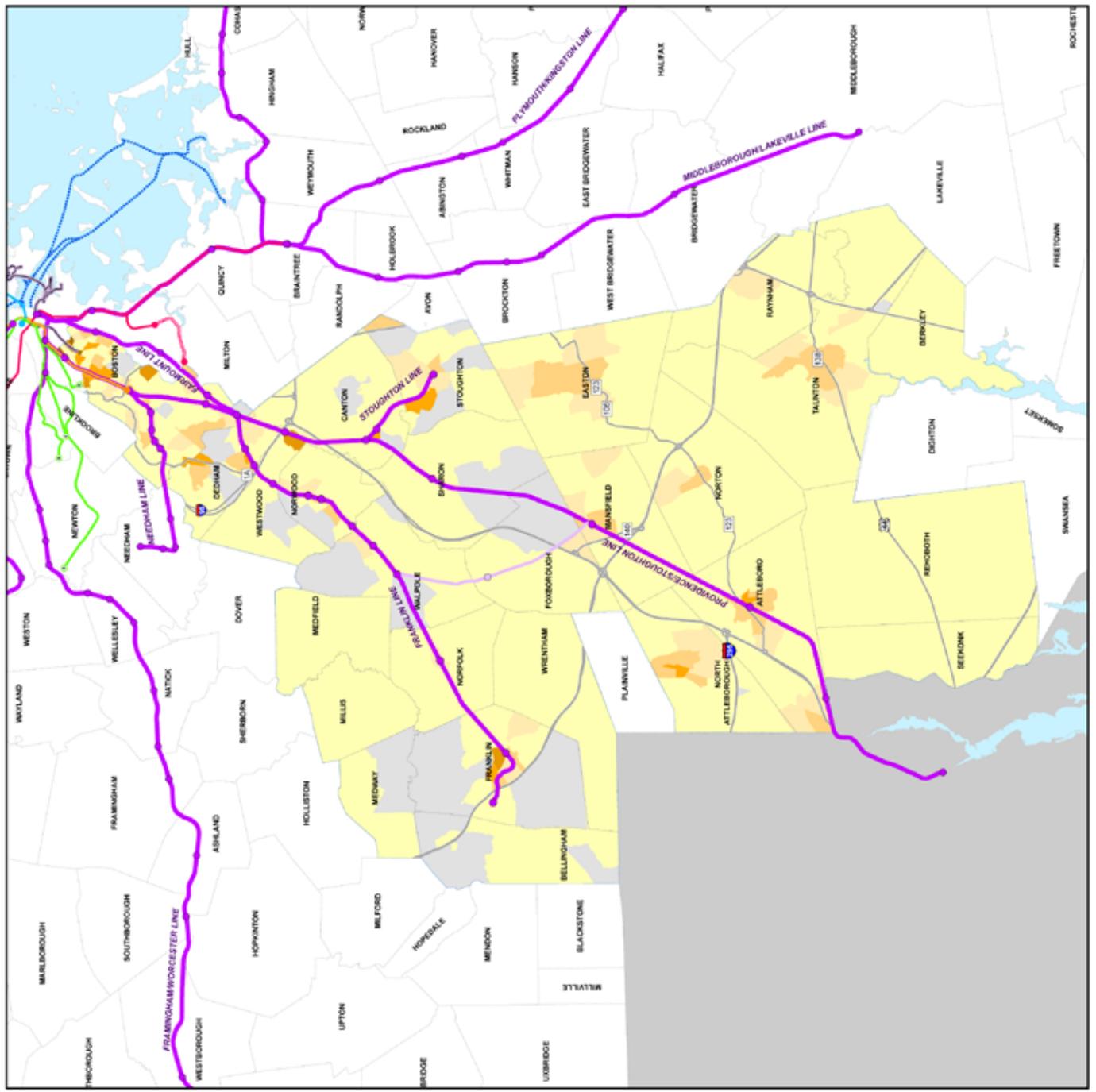
Commuter Rail

- Commuter rail line

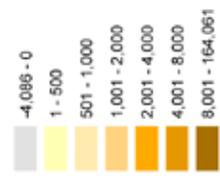


MAP E-2
Southwest Corridor
of the MBTA Service Area

Projected Change in
Population Density
from 2000 to 2030



2030 MetroFuture Projection
Change in Population/Sq. Mi. by TAZ



- Rapid Transit**
- Blue Line
 - Green Line
 - Orange Line
 - Red Line
 - Mattapan High-Speed Line
 - Silver Line

Commuter Boat

- Commuter boat route

Commuter Rail

- Commuter rail line

0 1.5 3 6 Miles

MBTA
 Program for
 Rapid Transportation

March 2008

Brockton Area Transit (BAT) provides a bus route connecting with Stoughton Station on the Stoughton branch of the Providence/Stoughton commuter rail line. Also, the Medway Council on Aging operates a bus service connecting with Norfolk Station on the Franklin Line.

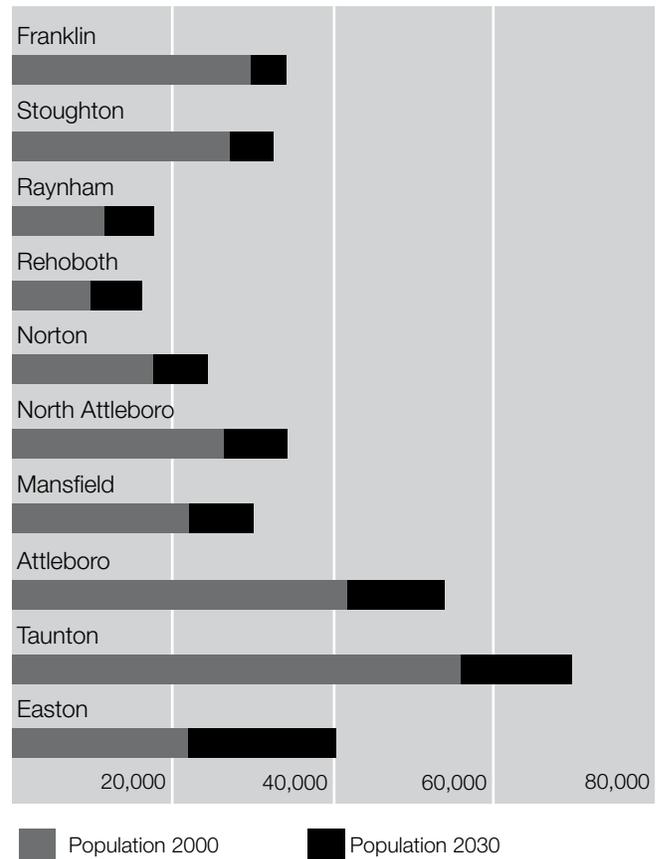
POPULATION

The most densely populated areas of the corridor are the Boston neighborhoods. Parts of some other communities have densities similar to Boston's, usually near a commuter rail stop. North Attleborough and Taunton also have densely populated sections (see Map E-1). The majority of corridor communities are projected to experience little or no change in population density between 2000 and 2030, with the largest changes expected in Boston or close to commuter rail stations in Westwood, Franklin, and Stoughton (see Map E-2).

According to the U. S. Census, the corridor's 2000 population was 1,090,303. This population is projected to increase by 21%, to 1,314,062, by 2030.¹ In 2000, more than half of the population (592,398) in the corridor lived in the Boston neighborhoods that are included in the Southwest Corridor. By 2030, the Boston population in the corridor is projected to grow by almost 20%, to 699,174. Although the other communities will grow by 23%, they will still constitute less than half of the corridor population. Outside of Boston, 38% of the population increase is expected in only three communities: Easton, Taunton, and Attleboro. (See Figure E-1.)

Examples of large housing developments proposed or in the permitting process include 1,000 new homes in Westwood, adjacent to Route 128 Station on the Providence/Stoughton commuter rail line, and 730 units in Jamaica Plain, adjacent to Forest Hills Station on the Orange Line.

FIGURE E-1
Southwest Corridor 2000-2030
Population Growth: Top Ten Communities*
in Order of Increase



* Does not include Boston

EMPLOYMENT

As with population, the highest employment densities in the corridor generally occur in communities closest to Boston and in communities along commuter rail. Corridor city Taunton lies outside I-495 and is not currently served by commuter rail, but also has high employment density (see Map E-3). Although some communities are projected to experience some degree of density change, the majority are projected to experience little or no change between 2000 and 2030. (See Map E-4.)

¹ Metropolitan Area Planning Council (MAPC), Old Colony Planning Council (OCPC), and Southeastern Regional Planning and Economic Development District (SRPEDD) population and employment forecasts.

Overall, employment in the corridor is projected to increase by 19% between 2000 and 2030. Boston, which is projected to increase by 15%, accounts for almost half of the total growth in the corridor.² The communities outside of Boston will grow by 26%. Approximately 41% of all of the corridor growth outside of Boston will occur in communities outside of I-495. (See Figure E-2.)

FIGURE E-2
Southwest Corridor 2000-2030
Employment Growth: Top Ten Communities
in Order of Increase



The Westwood and Forest Hills developments also envision substantial commercial activity. The completed Westwood development would include 1.25 million square feet of retail space and 1.65 million square feet of office space, and the Forest Hills project proposes 250,000 square feet of office space. These projects clearly qualify as transit-oriented developments.

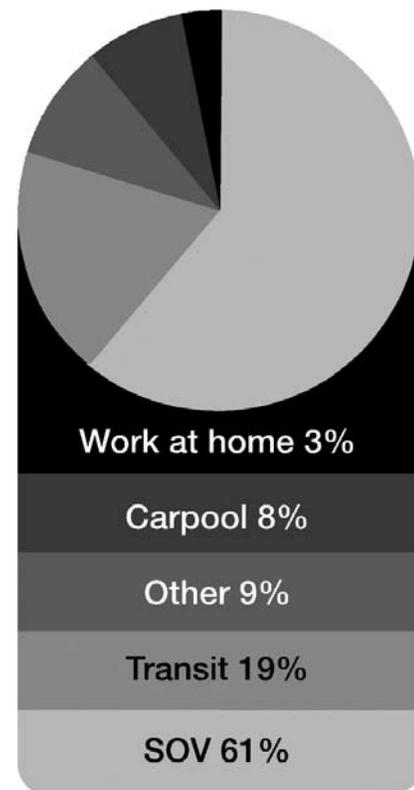
² Ibid.

³ *Commuting in America III: The Third National Report on Commuting Patterns and Trends*, NCHRP Report 550, Transportation Research Board, October 2006, p. 3.

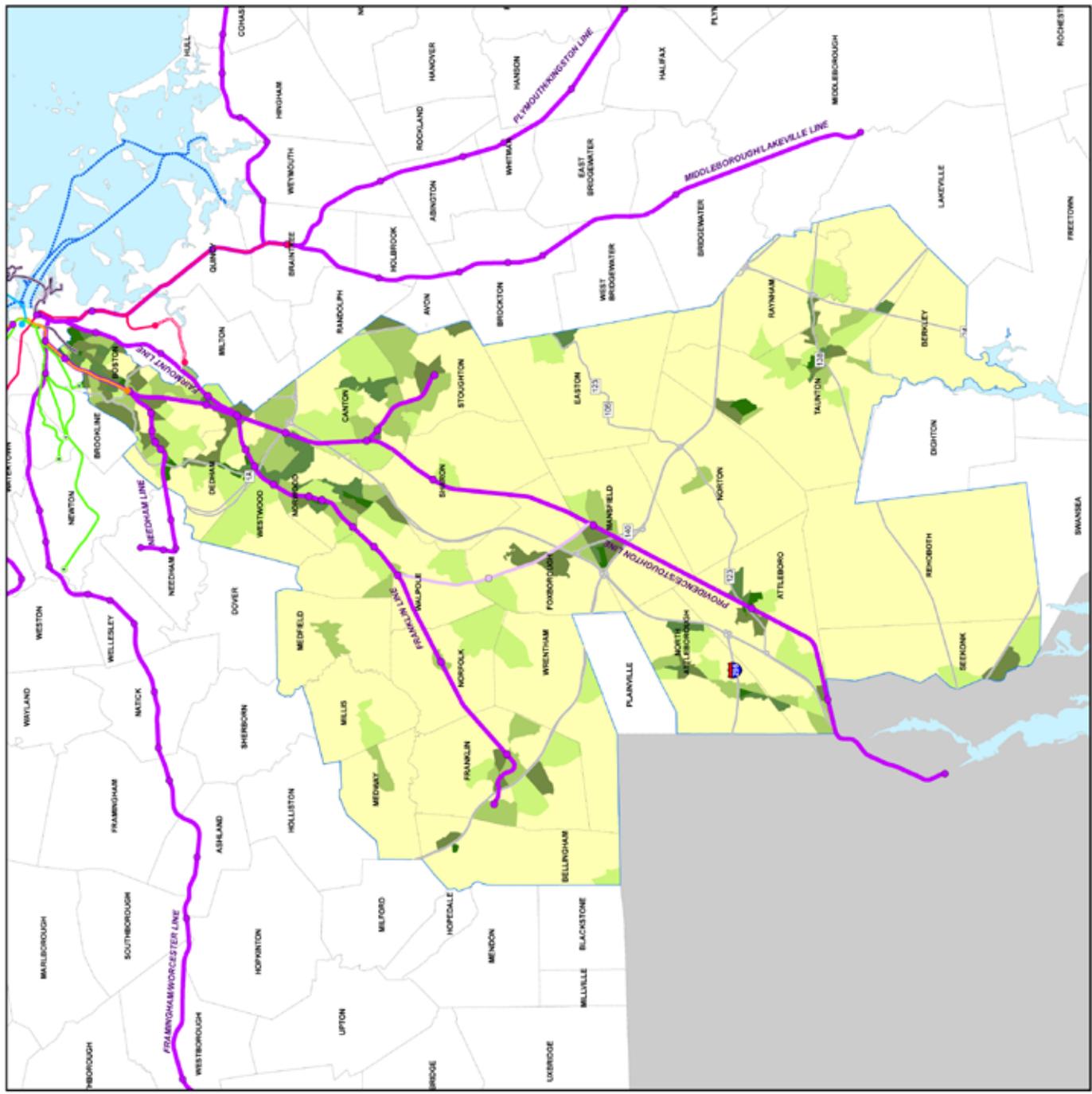
JOURNEY TO WORK

Nationally, work trips comprise a small proportion—15%—of all trips.³ Because most commuting occurs during peak travel times, work-trip volumes determine the capacity needs, as well as the performance, of highway and transit systems. In the year 2000, of all work trips that originated in the Southwest Corridor, 61% were made in single-occupancy vehicles (SOVs); 19% were made on transit. (See Figure E-3.) Comparable figures, excluding the areas of Boston that are in the Southwest Corridor, are 82% single-occupancy vehicle and 6% transit. (See Figure E-4.)

FIGURE E-3
2000 Travel Modes to Work by
Southwest Corridor Residents



MAP E-3 Southwest Corridor of the MBTA Service Area Employment Density, 2000



2000 CTPS Employment Database
Employees/Square Mile by TAZ

- 0 - 500
- 501 - 1,000
- 1,001 - 2,000
- 2,001 - 4,000
- 4,001 - 8,000
- 8,001 - 10,000

- Rapid Transit**
- Blue Line
 - Green Line
 - Orange Line
 - Red Line
 - Mattapan High Speed Line
 - Silver Line

- Commuter Boat**
- Commuter boat route

- Commuter Rail**
- Commuter rail line
 - Special MBTA sporting events

0 1.25 2.5 5 Miles



March 2008

FIGURE E-4
2000 Travel Modes to Work by Southwest
Corridor Residents (Excluding Boston)

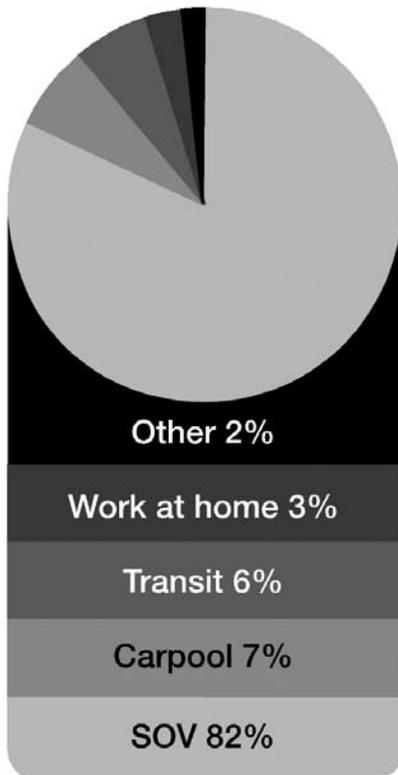
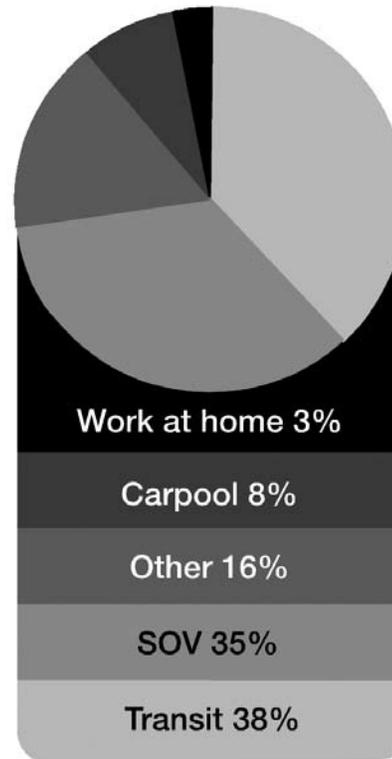
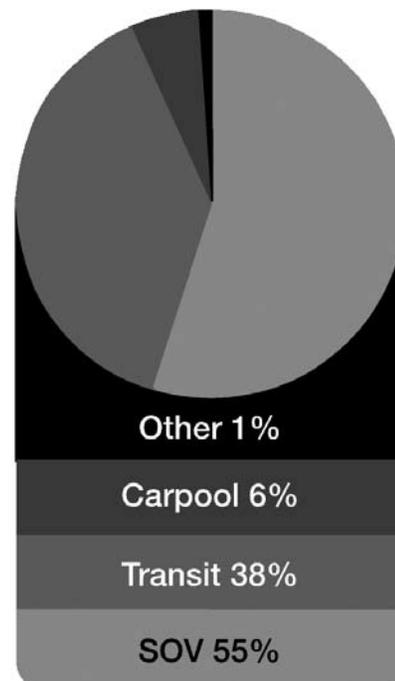


FIGURE E-5
2000 Travel Modes to Work
in Boston and Cambridge
by Southwest Corridor Residents



Most MBTA service is radially oriented towards Boston and Cambridge, which, together, are the destinations for 44% of the work trips made by corridor residents (Boston by itself attracts 85% of these work trips). Of the work trips made by corridor residents to Boston and Cambridge, 35% are made in single-occupancy vehicles, and 38% are transit trips. (See Figure E-5.) When work trips made by residents of the City of Boston are excluded, the proportions of corridor residents commuting to Boston and Cambridge are 55% single-occupancy vehicle and 37% transit. (See Figure E-6.)

FIGURE E-6
2000 Travel Modes to Work
in Boston and Cambridge by Southwest
Corridor Residents (Excluding Boston)



TRAFFIC CONGESTION

There are no radial highways from this corridor directly to Boston. I-95 runs from the Rhode Island border at Attleboro to Route 128 in Canton. It then follows Route 128 to the northwest, arcing around the inner suburbs until Peabody, where it splits off from Route 128 and turns north to New Hampshire. The most direct route to Boston from I-95 in Canton is I-93, which begins at I-95 and goes east to the Braintree split. It then turns north, passes under Boston in the Tip O'Neill tunnel, and continues north to New Hampshire. South of Sharon, average speeds are 60 mph or more on I-95, with varying inbound AM peak-period speeds as low as 30–44 mph between Sharon and Route 128.

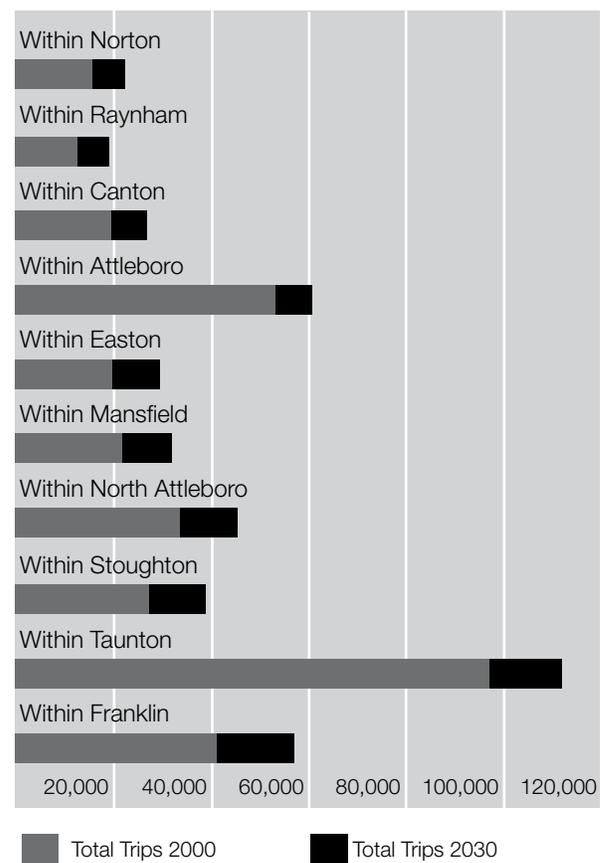
Traffic counts indicate that about 57,000 vehicles travel each way per weekday through the segment of I-95 just south of Route 128. The Providence/Stoughton commuter rail line serves the same corridor. Recent counts indicate that there are about 15,600 inbound riders per weekday on trains on this line as they leave Route 128 Station. This is equal to a 21.5% share of the combined person-volume on the trains and I-95, ignoring multiple-occupancy of highway vehicles. This unusually high share is partly attributable to the high average train speeds and service frequencies on this route, as well as to the lack of a direct highway route to the urban core north of Route 128.

TRAVEL PROJECTIONS

The CTPS regional travel-demand model provides estimates of current travel volumes and projections of future travel volumes for all major modes: auto, transit, and walk/bike. A useful way of tracking travel growth patterns is to look at the change in travel between pairs of municipalities, to include trips beginning and ending in the same municipality. By 2030, there are projected to be 46 travel pairs in the Southwest Corridor with predicted increases of at least 1,000 two-way trips per day. The projected travel-volume increase for these 46 pairs is 203,103 trips per day (approximately 28.1%).

Since some of these cities and towns have large land areas, a major portion of the additional trips are projected to take place entirely within the municipality. Of the 46 pairs with predicted travel-volume increases of over 1,000, 25 are for trips that begin and end within one municipality, notably trips made within Franklin (15,862), within Taunton (14,796), within Stoughton (11,723), within North Attleborough (11,675), and within Mansfield (10,411). In 19 instances, increases of more than 1,000 trips between adjoining municipalities or neighborhoods are projected. (See Figure E-7.)

FIGURE E-7
Southwest Corridor Trip Increases 2000-2030:
Top Ten in Order of Increase



In 2000 Taunton had the highest number of existing trips in the corridor that have both ends in one municipality. Taunton has a dense central core and is served by several local bus routes of the Greater Attleboro Taunton Regional Transit Authority, but Franklin, Stoughton, North Attleborough, and Mansfield all have very limited existing

bus services, despite having achieved some central density. Many of the other projected travel-volume increases in this corridor are also between points with either limited or no transit service connections.

The model also projects that there will be 17 increases of over 1,000 daily trips between points in the Southwest Corridor and points in other PMT corridors, including 7 with the Southeast Corridor, 8 with the West Corridor, and one each with Boston Proper and the Northwest Corridor. The more compact Boston neighborhoods show the largest number of new trips spilling over into adjoining corridors, notably between the Fenway and Roxbury neighborhoods (3,113), and between the Longwood Medical and Academic Area and Roxbury (2,727). The projected increases for the other 15 pairs are all below 1,800.

ENVIRONMENTAL JUSTICE

The federal government defines environmental justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, education level, or income with respect to the development, implementation, and enforcement of environmental laws. The MBTA monitors EJ through implementation of and reporting for Title VI of the Civil Rights Act of 1964.

The Southwest Corridor encompasses several of Boston's densely populated neighborhoods: Roxbury, Jamaica Plain, Roslindale, and West Roxbury. All of Roxbury and most of Jamaica Plain and Roslindale are classified as minority areas for Title VI. Most of Roxbury and part of Roslindale are classified as both low-income and minority. Outside of Boston, only small pockets of minority or low-income areas exist in the other municipalities in the Southwest Corridor. Attleboro includes a small area that is minority but not low-income, and Taunton is home to a small area that is low-income but not minority.

Over 40 bus routes operate in the Southwest Corridor; 34 of these routes are classified as minority, and 15 are classified as both minority and low-income.

The Silver Line Washington Street bus rapid transit (BRT) line operates in the Southwest Corridor, and all of the stops in this corridor are classified as both minority and low-income.

A portion of the Orange Line operates in the Southwest Corridor. All of the Orange Line stations in this corridor are classified as minority, and three of the stations are classified as low-income as well.

Two commuter rail lines operate exclusively in this corridor. Five stations, four of which are located in Boston, meet the minority station criterion; one meets the criteria for both minority and low-income stations.

MOBILITY PROBLEMS AND PROPOSED SOLUTIONS

CAPACITY IMPROVEMENTS ARE NEEDED

Investments Will Be Needed to Ensure that Sufficient Capacity Is Available to Serve Current and Projected Travel Demand.

Problem 1:

As indicated above, by 2030 large growth in intra-city trips is projected for Stoughton, Canton, Norwood, and Walpole. In addition to commuter rail service in these four communities, Norwood and Walpole are currently served by local bus Route 34E, Canton by Route 716, and Stoughton by BAT.

Proposed Solution:

Expand MBTA fixed-route service (or partner with local social-service providers, town officials, and the Boston Region MPO to institute a new demand-responsive service) to connect densely developed residential areas with key activity hubs (including employment, commercial, and educational hubs) along radial express-highway corridors, especially the new Westwood Station transit-oriented development. Similar efforts could also be encouraged with neighboring RTAs and MPOs for communities like Stoughton that are outside the MBTA and Boston Region MPO service areas.

Problem 2:

By 2030, modeling projections suggest that 12 bus routes in the Southwest Corridor may cause passenger-crowding levels that would trigger the need for additional service. These include:

- Bus Route 15 Kane Square – Ruggles Station
- Bus Route 19 Fields Corner Station – Ruggles Station via Grove Hall
- Bus Route 21 Ashmont Station – Forest Hills Station
- Bus Route 22 Ashmont Station – Ruggles via Jackson Square Station
- Bus Route 28 Mattapan Station – Ruggles Station via Dudley
- Bus Route 37 Baker and Vermont Streets – Forest Hills Station
- Bus Route 40 Georgetown - Forest Hills Station via Alwin Street
- Bus Route 43 Ruggles Station - Park and Tremont Streets
- Bus Route 47 Cambridge Central Square – Broadway Station
- Bus Route 66 Harvard Square – Dudley Station via Harvard Street
- Bus Route CT1 Central Square Cambridge – B.U. Medical Center/Boston Medical Center
- Bus Route CT3 Beth Israel Deaconess – Andrew Station via B.U. Medical Center

Several of these routes provide circumferential connections between the Southwest and other corridors. Route 47 also operates in the Northwest Corridor, Routes 19, 22, and 28 also operate in the Southeast Corridor, and Route 66 also operates in the Northwest and West Corridors, Route CT1 also operates in the Northwest Corridor, and CT3 also operates in the Southeast Corridor. These routes are also discussed in the corresponding problem statements.

Proposed Solutions:

- To increase peak-period capacity and to ensure that crowding does not exceed safe and comfortable levels, 22 additional 40-foot buses would be required to operate these routes. Replacing existing 40-foot buses with 60-foot buses would be another method for increasing capacity to meet demand.
- Implement bus-rapid-transit (BRT) elements, such as signal priority, cue jumps, fare pre-payment, a dedicated lane, lengthened stop spacing, improved bus stop amenities, etc.
- Extend BRT service from Dudley Square South along the Warren Street and Blue Hill Avenue corridor, which is served by Route 28.
- Implement the Urban Ring project.

Problem 3:

Some desirable destinations in the Southwest do not have direct rail service to Boston. Though it is currently beyond the boundaries of the MBTA's service area, Fall River was considered in this assessment, and it was determined that it could benefit from service extensions.

Proposed Solution:

Implement the South Coast Rail project

Problem 4:

Densely populated areas currently served by Silver Line Washington Street lack direct transit connections to jobs and travel at Logan Airport and to the jobs in downtown and the rapidly growing waterfront area. The Silver Line Waterfront service does not provide direct connections to the Green Line or Orange Line.

Proposed Solution:

- Implement Silver Line Phase III.
- Implement light rail on Washington Street to connect directly to the Green Line.

Problem 5:

Very densely populated areas in the corridor are currently served by MBTA bus Routes 23 and 28 but do not have frequent rapid transit access within a reasonable walking distance. In addition, travel times on Routes 23 and 28 are long and unreliable, and Route 23 has difficulty meeting demand since it uses 40-foot buses in mixed traffic.

Proposed Solutions:

- Extend BRT service from Dudley Square along Warren Street to Grove Hall, continuing on Blue Hill Avenue to Mattapan Station and on Washington Street to Ashmont Station.
- Implement Fairmount Line improvements including four new stations. This is a State Implementation Plan (SIP) commitment in the MBTA's Capital Investment Program (CIP). A fifth new station might also be considered.
- Extend third track from Readville to Route 128/Canton for Fairmount Line Shuttle service.
- Extend Orange Line service from Forest Hills Station to the Route 128 Station via the Providence commuter rail line right-of-way. This extension would include three stations in Boston neighborhoods.

Problem 6:

Air-traffic capacity constraints at Logan Airport call for a regional effort to attract suburban trips to other airports.

Proposed Solution:

Extend Commuter Rail from Providence to T. F. Green Airport. This project would be funded by Rhode Island.

Problem 7:

Bus Route 39 is the most heavily used route in a busy corridor.

Proposed Solution:

Implement BRT in this corridor.

Problem 8:

Many of the commuter rail trains that pass

through Ruggles Station cannot stop due to platform capacity constraints.

Proposed Solution:

Build a new northbound platform at Ruggles Station.

Problem 9:

Transit Access to Milford is limited (only a few MetroWest RTA trips in the peaks), and Milford serves as a regional employment center.

Proposed Solution:

Extend Franklin Line service along the existing freight line to Milford.

Problem 10:

The new economic development projects at Foxboro Stadium warrant consideration of regular commuter rail service.

Proposed Solution:

Expand the Foxborough service to include week-day service for commuters.

Problem 11:

The capacity of the Franklin Line is constrained by single track near Readville.

Proposed Solution:

Increase capacity of existing Franklin Line service by double-tracking the existing line near Readville.

Problem 12:

Some single-track sections limit service capacity on the Stoughton and Needham Lines.

Proposed Solution:

Double-track between Canton Center and Stoughton and between the Plains Interlocking and Needham.

ACCESS TO MBTA SERVICES NEEDS TO BE IMPROVED**ADA ACCESSIBILITY****Problem:**

Although the MBTA has made strides toward providing ADA accessibility to all of its services,

some gaps still remain. On the Providence/Stoughton Line, accessibility improvements are currently planned for Sharon Station; and on the Franklin Line, Franklin, Walpole, Plimptonville, Windsor Gardens, Islington, and Endicott stations have not yet been made accessible.

Proposed Solution:

Based on the feasibility of construction, the following stations (Table E-1) are a priority for near-term accessibility improvements.

**TABLE E-1
Southwest Corridor
Station Accessibility Priorities**

LINE	STATION	PRIORITY
Franklin	Franklin/Dean College	High
	Walpole	Medium
	Windsor Gardens	Medium
	Endicott	Low

STATION PARKING

Problem 1:

Access to rail transit services, for customers of all abilities, is constrained by the availability of parking for automobiles. Currently, parking is at or near capacity at a number of commuter rail and rapid transit stations in the Southwest Corridor.

An inventory of station parking that was completed during the fall of 2005 and winter of 2006 (Table E-2) shows that parking at the following stations is utilized at 85% of capacity or greater.⁴

**TABLE E-2
Southwest Corridor
Station Parking at 85% Usage or Greater**

LINE	STATION
Needham Line	Hersey
	West Roxbury
	Highland
	Bellevue
Franklin Line	Forge Park
	Franklin
	Norfolk
	Endicott
Providence/Stoughton Line	Attleboro
	Mansfield ⁵
	Sharon
	Stoughton
	Canton Center
	Canton Junction
Orange Line	Hyde Park
	Forest Hills
	Green Street

Proposed Solution:

At stations where the MBTA is the principal provider of parking, the MBTA can address inadequate parking capacity either by increasing the number of spaces or by controlling demand through measures like raising the price of parking overall or installing automated parking-fee collection at MBTA lots to allow for congestion pricing and to improve enforcement of parking regulations.

When evaluating expansion of parking, important considerations include the availability of MBTA-owned land, the potential cost of acquiring nearby land, and the potential cost of a multilevel structure. Based on these and other feasibility criteria, all of the stations in the table above would have some potential for expansion of MBTA parking: Forge Park, Franklin, and Norfolk on the Franklin

⁴ Fijalkowski, Jared, and Ostertog, Heather, *Inventory of Park-and-Ride Lots at MBTA Facilities*, Central Transportation Planning Staff, February 27, 2007.
⁵ Restoring the Foxborough spur to full service would relieve pressure on Mansfield, where the system is parking constrained, and would provide access to Patriot Place, a regionally significant development.

Line; Attleboro, Mansfield, Sharon, Stoughton, and Canton on the Providence/Stoughton Line; and Forest Hills on the Orange Line.

Problem 2:

For some customers, access to rail services is constrained by the lack of bicycle parking. A recent study provided a detailed inventory of bicycle amenities, by MBTA station, that included the location, number, and condition of bike racks, bike rack shelters, and signage directing cyclists to them. The study also noted that, at some stations where bike racks were provided, cyclists did not utilize the racks, but parked their bikes elsewhere.⁶

Proposed Solution:

The study recommended that the MBTA continue to expand bicycle parking at stations; however, the MBTA does not currently have a standard for determining what the appropriate number of spaces would be for each station. The study therefore also recommended that the MBTA adopt a standard for providing bicycle parking spaces at transit stations.

In instances where bikes were parked at locations other than at bike racks that were provided, the study made recommendations, based on the type of problem observed, including:

- The rack was in an inconvenient location (e.g., far from the platform).
- The rack was not sheltered from the weather.
- The rack was in a secluded location that was difficult to find or might encourage theft.
- The rack was damaged or difficult to use.

The following specific improvements recommended for stations at which existing bike racks were not used.⁷ (See Table E-3.)

**TABLE E-3
Southwest Corridor
Bicycle Parking Improvements**

LINE	STATION	RECOMMENDATION
Orange Line	Ruggles	Provide shelter for existing racks.
	Green Street	Provide shelter for existing racks.
	Needham Center	Provide shelter for existing racks.
Needham Line	Highland	Install racks.
	Hersey	Relocate racks to top of staircase.
Franklin Line	Dedham Corp. Center	Install racks.
	Norfolk	Provide shelter for existing racks.
Providence/Stoughton Line	South Attleborough	Provide shelter for existing racks.
	Canton Junction	Relocate existing racks to under the shelter.

CONNECTIONS WITH OTHER RTAs

Problem:

Two Regional Transit Authorities (RTAs) that provide connections to MBTA services serve the Southwest Corridor. Although it is possible to transfer between these RTAs and MBTA commuter rail stations, in many cases the present schedules do not provide convenient connections.

In downtown Attleboro, the endpoint of all the GATRA routes is a bus shelter on Union Street south of Park Street, only about one-tenth of a mile from Attleboro Station. Three routes also pass directly by Attleboro Station, but the others do not. Only two GATRA routes serve South Attleborough Station directly. Four routes have hourly service; one route has service every two hours; and three run on irregular headways ranging up to two hours or longer.

⁶ Fijalkowski, Jared, and Yaitanes, Justin, *2005–2006 Inventory of Bicycle Parking Spaces and Number of Parked Bicycles at MBTA Stations*, Central Transportation Planning Staff, October 2, 2007, Table 6.

⁷ Ibid.

The one GATRA route serving Mansfield Station originates at Wheaton College, in the town of Norton, and serves other points along state Route 140 in that town, including a park-and-ride lot. Unlike many of the other RTA services, this route was implemented primarily to provide connections to and from trains, rather than for local transportation. This route has daily service, with reduced weekend schedules. Sunday service is provided only when the college is in session.

The one Brockton Area Transit (BAT) bus route (Route 14) serving Stoughton runs between Cobbs Corner, on the border of Stoughton and Canton, to the Westgate Mall in Brockton. At the latter location, it connects with two BAT routes (4 and 4A) to the BAT Intermodal Transportation Centre in downtown Brockton. Some Route 14 trips are through-routed via the mall to the Transportation Centre. Route 14 passes within a few hundred feet of the Stoughton commuter rail station at Stoughton Square. Published Route 14 schedules do not show bus times at Stoughton Square, and do not mention the existence of the station.

Route 14 runs on an irregular headway, with intervals between trips ranging from 40 to 90 minutes. Based on the departure times shown at the ends of the route, the closest connection from an inbound Route 14 bus to an inbound AM peak-period train would require a wait of about 18 minutes at Stoughton Station. The one outbound PM peak-period trip on Route 14 would pass Stoughton Station about 35 minutes after the arrival of one train and 5 minutes before the next one.

BAT Route 14 also nominally connects at Cobbs Corner with a private-carrier bus route to Mattapan Station, funded by the MBTA as Route 716. However, most connections would require waits of 20 minutes or longer at the transfer point. Route 14 does make fairly close connections with BAT Routes 4 and 4A at Westgate Mall. Changes in the schedule of Route 14 to provide close connections with trains at Stoughton Station could result in less convenient service for passengers traveling between points on Route 14 and points on the other BAT routes.

The route operated by the Medway Council on Aging is also intended primarily to provide commuter rail connections. It runs only on weekdays. A schedule that appeared on the town's website in November 2007 showed buses scheduled to arrive at Norfolk Station 10 minutes before departures of three of the five inbound AM peak-period trains, and 11 minutes before the departure of another train. Connections from three of the five outbound PM peak-period bus trips stopping at Norfolk were also advertised, with buses apparently leaving the station as soon as transferring passengers were all on board. In Medway, buses stopped at four locations, including three with parking available for commuters.

Proposed Solution:

Although the Southwest Corridor is served by GATRA and BAT, current schedules provide few close connections between RTA and MBTA services. In general, RTA bus routes do not function well as commuter rail feeders, as they serve different functions and populations. Most RTA routes provide local service on even headways, while commuter rail provides long-distance commuter service and operates on uneven headways due to a number of equipment and operational constraints. In addition, because RTA routes have frequent stops and many do not provide direct service to stations, using them to access stations is much slower than driving.

Adjusting the RTA services to meet the commuter rail schedules would inconvenience customers making local trips. Changing the commuter rail schedules to coordinate with RTA services would require significant capital and operating costs without significantly improving service for most commuter rail riders. The best solution, therefore, would be to create RTA feeder services to commuter rail. It is recommended that the MBTA work with GATRA and BAT to select one or more stations on the Providence/Stoughton Line and to determine the number and alignment of routes that would be required to provide adequate feeder services.

The City of Attleboro is planning a major downtown revitalization project that is expected to include construction of an intermodal transportation center at Attleboro Station. This would facilitate coordination of bus and train service there.

The 2003 PMT evaluated and recommended two commuter rail feeder routes to commuter rail stations in this corridor that do not currently have bus connections. One would operate from Foxborough to Sharon on the Providence/Stoughton Line, and the other from Medway via Millis to Norfolk Station on the Franklin Line. The Medway Council on Aging route to Norfolk Station now provides some of the service that the latter recommended route would have provided.

REVERSE-COMMUTE SERVICE

Problem:

In the Southwest Corridor, there is some potential for reverse-commute service between residential areas of Boston and employment destinations in Dedham, Norwood, and Westwood on the Franklin Line, and to Westwood and Canton on the Providence/Stoughton Line. Of these municipalities, Dedham, Norwood, and Canton are among the top 10 in the region for attracting employees from Boston neighborhoods.⁸ To attract sufficient riders to justify reverse-commute services on either line, bus or van connections from stations to employment sites in the corridor, particularly along

Route 128, would need to be provided.

Proposed Solution:

- The MBTA should work with area Transportation Management Associations (TMAs) to provide shuttle service to commuter rail.
- Expand reverse commute options by adding outbound AM-peak-period and inbound PM-peak-period commuter rail trips

INFRASTRUCTURE ENHANCEMENTS ARE NEEDED

Problem:

In order to continue to maintain and improve service quality as demand grows and as technologies and materials improve, the MBTA will need to continually invest in infrastructure enhancements.

Proposed Solution:

Some of the infrastructure enhancement projects that have been identified as future needs are shown in Table E-4.

⁸ Humphrey, Thomas J., *MBTA Reverse Commuting Study*, Central Transportation Planning Staff, May, 2001, pp. ES-2 and ES-5.

**TABLE E-4
Southwest Corridor
Infrastructure Enhancement Projects**

BUS RAPID TRANSIT	
ASSET CATEGORY	PROJECT DESCRIPTION
Revenue vehicles	Purchase additional vehicles to support Silver Line Phase III service.
COMMUTER RAIL	
ASSET CATEGORY	PROJECT DESCRIPTION
Communications	Extend the Real Time Active Train Summary at the current commuter rail operations control center to include trains on line segments dispatched by Pan Am and Amtrak. This would minimize signaling and scheduling conflicts between MBTA commuter rail trains and freight trains by bringing all commuter rail and freight service under one system.
Maintenance facilities	Expand the Readville facility.
Maintenance facilities	Construct additional midday storage for commuter rail trains used in south-side operations.
Track/right-of-way	Add third track between Canton Junction Interlocking and Readville on the Providence Line to minimize conflicts with Acela service.
Track/right-of-way	Add third track from Mansfield to Attleboro on the Providence Line.
Track/right-of-way	Add fourth track from Readville to Forest Hills on the Providence Line
Track/right-of-way	Restore double track connection between the Fairmount and Providence Lines.

A STATE OF GOOD REPAIR NEEDS TO BE ACHIEVED

Problem:

A number of system preservation projects must be addressed in the short- to mid-term to bring the system into a state of good repair and to ensure the safety of passengers and reliability of service.

Proposed Solutions:

Some of the specific projects needed to bring the system into a state of good repair and maintain it in that condition are included in Table E-5.

**TABLE E-5
Southwest Corridor
State-of-Good-Repair Projects**

BUS RAPID TRANSIT	
ASSET CATEGORY	PROJECT DESCRIPTION
Revenue vehicles	Complete midlife overhaul for the 17-vehicle CNG fleet currently operating on Silver Line Washington Street.
ORANGE LINE	
ASSET CATEGORY	PROJECT DESCRIPTION
Power	Remove all manhole cable switches from the manholes on the Orange Line between Massachusetts Avenue and Forest Hills stations and replace with new cable switches.
Power	Install negative return cables from substations to track along the Orange Line.
Power	Install AC cable and DC breakers along the Orange Line.
Power	Upgrade the DC negative return system on the Orange Line.
Revenue vehicles	Procure new cars to allow the retirement of the Orange Line No. 12 fleet, which was purchased in 1979–1981.
Track/right-of-way	Replace concrete support pedestals that support the third rail on the Orange Line with 4,000 new blocks of treated wood. Replace approximately 2,000 feet of third rail in Orange Line station areas.
COMMUTER RAIL	
ASSET CATEGORY	PROJECT DESCRIPTION
Bridges	Replace/rehabilitate three bridges on the Fairmount Line and two on the Providence/Stoughton Line that are rated structurally deficient.